

1 **THE EMBODIMENTS OF THE INVENTION IN WHICH AN**
2 **EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS**
3 **FOLLOWS:**
4

5 1. Apparatus for printing indicia on an external surface of
6 cylindrical ammunition having an axis comprising:

7 a plurality of inkjet print heads for spraying preprogrammed indicia
8 on the ammunition;

9 a conveyor for carrying a plurality of cylindrical ammunition thereon
10 and for rotating the cylindrical ammunition about the ammunitions axis while
11 traversing the plurality of inkjet print heads for printing the preprogrammed indicia
12 thereabout; and

13 a controller for causing the pre-programmed indicia to be sprayed
14 on the ammunition as the ammunition is rotated.
15

16 2. The apparatus as described in claim 1 wherein the inkjet
17 print heads spray UV curable ink and further comprises:

18 a UV source for curing the UV-curable ink,
19 wherein the UV source is positioned in a housing through which the
20 printed ammunition are conveyed by the conveyor.
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22 3. The apparatus as described in claim 1 wherein the
23 preprogrammed indicia is a camouflage pattern.
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1 4. The apparatus as described in claim 1 wherein the
2 controller is a computer.

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4 5. The apparatus as described in claim 1 wherein the
5 ammunition is a shotshell further comprising a case and a hull attached thereto.

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7 6. The apparatus as described in claim 5 further comprising:
8 a plurality of spindles projecting from the conveyor for insertion into
9 and engagement of an open end of a shotshell case for rotatable conveyance
10 thereof; and

11 means for orienting the shotshell to present the open end of the
12 case to the spindle for engagement thereon.

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14 7. The apparatus as described in claim 6 wherein the spindles
15 are carried rotatably on the conveyor for rotating the shotshells thereon.

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17 8. The apparatus as described in claim 6 further comprising at
18 least one drive belt, driven in an opposite direction to a direction of the conveyor,
19 and operable to engage the rotatable spindles causing rotation thereof.

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21 9. The apparatus as described in claim 8 further comprising a
22 idler belt positioned on an opposing side of the conveyor to the drive belt to aid in
23 engagement of the drive belt with the spindles positioned therebetween.

1 10. The apparatus as described in claim 6 further comprising a
2 rack and wherein the spindles further comprise pinions for engaging the rack and
3 rotating the spindles therebetween.

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5 11. The apparatus as described in claim 6 wherein a distal end
6 of each of the plurality of spindles further comprises a magnet for engaging a
7 metal hull and attached case thereon.

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9 12. The apparatus as described in claim 1 wherein the plurality
10 of inkjet printer heads further comprises:

11 at least one printer head for printing yellow;
12 at least one printer head for printing cyan; and
13 at least one printer head for printing magenta.

14
15 13. A method of applying indicia about an external surface of
16 cylindrical ammunition comprising:

17 providing a plurality of ammunition;
18 orienting the ammunition for application of the indicia thereon; and
19 applying the indicia to a substantial portion of an entire outer
20 surface of the ammunition.

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1 14. The method as described in claim 13 further comprising
2 rotating the ammunition about an axis while applying the indicia.

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4 15. The method as described in claim 14 further comprising
5 controlling one or more ink jet print heads for applying a preprogrammed indicia
6 to the substantial portion of the entire outer surface of the ammunition.

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8 16. The method as described in claim 14 further comprising
9 controlling one or more ink jet print heads for applying a preprogrammed indicia
10 to the substantial portion of the entire outer surface of the ammunition,
11 wherein the preprogrammed indicia is a camouflage pattern.

12

13 17. The method as described in claim 13 further comprising:
14 pre-treating the substantial portion of the entire outer surface of the
15 ammunition using a corona treatment; and
16 controlling one or more ink jet print heads for applying a
17 preprogrammed indicia to the substantial portion of the entire outer surface of the
18 ammunition using a solvent-based ink.

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1 18. The method as described in claim 13 wherein the
2 ammunition is a shotshell, each shotshell having a case and attached hull, the
3 method further comprising:

4 orienting the shotshells so as to present an open end of the case to
5 a conveyor spindle;

6 engaging the open end of the case with the conveyor spindle;

7 actuating the conveyor to cause the engaged shotshells to be
8 rotatably passed adjacent a plurality of inkjet print heads;

9 actuating the inkjet print heads to spray ink for imparting the indicia
10 about substantially the entire external surface of each shotshell; and

11 removing the shotshells from the conveyor.

12

13 19. The method according to claim 18 wherein the inkjet ink is
14 UV curable ink and following actuating the inkjet printer heads to impart the
15 indicia, further comprising:

16 exposing the shotshells to a UV source for curing the ink sprayed
17 thereon.

18

19 20. The method as described in claim 13 wherein the indicia
20 printed on the ammunition is a camouflage pattern.

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1 21. The method as described in claim 20 wherein the inkjet print
2 heads are actuated by a controller, the controller being programmed with the
3 camouflage pattern.

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5 22. The method as described in claim 13 further comprising:
6 applying the indicia to a heat transfer sleeve;
7 positioning the heat transfer sleeve over at least a portion of the
8 external surface of the ammunition; and
9 applying sufficient heat to the heat transfer sleeve to cause the heat
10 transfer sleeve to shrink and bond to the external surface of the ammunition.

11
12 23. The method as described in claim 20 further comprising:
13 applying non-glare ink to a portion of the ammunition left uncovered
14 by the heat transfer sleeve.

15
16 24. The method as described in claim 20 wherein the indicia
17 applied to the heat transfer sleeve is a camouflage pattern.

18
19 25. A camouflaged ammunition comprising a substantially
20 cylindrical outer surface,
21 wherein indicia is applied to substantially the entire outer surface.

1 26. The camouflaged ammunition as described in claim 25
2 wherein the indicia comprises at least a camouflage pattern.

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4 27. The camouflaged ammunition as described in claim 25
5 wherein the indicia comprises:

6 a camouflaged pattern covering a portion of the outer surface; and
7 a non-glare ink covering a remaining portion of the outer surface.

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9 28. The camouflaged ammunition as described in claim 25
10 wherein the ammunition is a shotshell.